Course Descriptions None 2026-2027

Course Title	Algorithmic Decision Making
Course Code	EBC4188
ECTS Credits	6,5
Assessment	Whole/Half Grades

Period

Period	Start	End	Mon	Tue	Wed	Thu	Fri
1	31-8-2026	16-10-2026	X			X	

Level	Advanced
Coordinator	Marc Schröder For more information:m.schroder@maastrichtuniversity.nl
Language of instruction	English
Goals	Students learn how to * model real-life problems as mathematical optimization problems. * design and implement algorithms to solve problems. * formally proof properties of algorithms. * evaluate and select algorithms based on properties of the algorithms. * work in teams to solve a mathematical optimization problem.
Description	Algorithmic Decision Making explores how mathematical and computational tools are used and designed to improve decision-making in different domains ranging from traditional optimization to strategic environments. The course introduces key concepts like (integer) linear programming, matching algorithms, and incentives in mechanism design and games. Students will learn to model real-world decision problems using the appropriate tools, implement and analyze algorithms, and evaluate their performance.
Literature	There are lecture notes available via Canvas.
Prerequisites	Exchange students need to have obtained a BSc degree in Economics, International Business, Econometrics, or a related topic. Familiarity with the basic concepts of optimization and linear programming will be helpful. A solid basis in mathematics and calculus is also recommendable.
Transitional Regulations	<ul class="trcohorts"> - Master Business Research - No specialisation [2023-2024 and earlier] - Master Business Research - Operations Research [2023-2024 and earlier] - In 2024-2025 and 2025-2026 education and exam/resit opportunities are offered. - In 2026-2027 exam/resit opportunities are offered. - From 2027-2028 onwards, the course is cancelled. <table><col style="width: 200px;"><col style="width: 120px;"><col style="width: 120px;"><col><thead><tr><th>Academic Year</th><th>Education</th><th>Exam/Resit</th><th>Replacement(s)</th></tr></thead><tbody><tr><td>2024-2025 - 2025-2026</td><td>X</td><td>X</td><td> </td></tr><tr><td>2026-2027</td><td> </td><td>X</td><td> </td></tr><tr><td>2027-2028 onwards</td><td> </td><td> </td><td> </td></tr></tbody></table>
Teaching methods	PBL / Presentation / Assignment / Groupwork
Assessment methods	Final Paper / Written Exam / Assignment
Evaluation in previous academic year	For the complete evaluation of this course please click http://iwio-sbe.maastrichtuniversity.nl/rapporten.asp?referrer=codeUM

This course belongs to the following programme / specialisation

Master Business Research - No specialisation	In transition - Year 2 Free Electives
Master Business Research - Operations Research	In transition - Year 1 Compulsory Courses
Master Econometrics and Operations Research	Compulsory Courses
Master Economic and Financial Research - Econometrics and Operations Research	Elective Courses
Master Economic and Financial Research - Econometrics and Operations Research	Year 1 Core Courses
Master Economic and Financial Research - No specialisation	Elective Courses
SBE Exchange Master	Master Exchange Courses
SBE Non Degree Courses	Master Courses